

LIVERMORE

CALIFORNIA

May 13, 2011

Simon Eching
Water Use and Efficiency Branch
Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236-0001

SUBJECT: AB 1881 Compliance – Water Efficient Landscape Ordinance

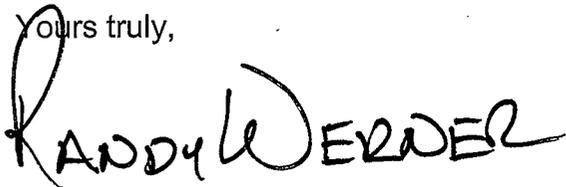
Dear Mr. Eching:

This letter is to notify the Department of Water Resources that Livermore Municipal Water and the City of Livermore have completed the processing of our Water Efficient Landscape Ordinance (WELO) per State Law. On December 13, 2010, the Livermore City Council adopted Livermore's WELO and it went into effect. As of January 13, 2011, Livermore Municipal Water and the City of Livermore will no longer be following California's Model Ordinance which we have been following since January 1, 2010.

As I mentioned in my last letter dated January 28, 2010, Livermore also adopted in 2009 the Bay Friendly Civic and Commercial Landscape Scorecard and the principles and practices of Bay Friendly landscaping. I mention this because a number of items in the Bay Friendly Model are more restrictive than the WELO.

Attached to this cover letter is a copy of Ordinance 1926 which is our WELO. If you have any questions about Livermore's intentions, please call me at (925) 960 - 8100.

Yours truly,



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RW:rw

cc: Darren Greenwood, Assist. Public Works Director
Frank Guido, Planner
Planning

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IN THE CITY COUNCIL OF THE CITY OF LIVERMORE, CALIFORNIA

**AN ORDINANCE AMENDING CHAPTER 13.25 (WATER EFFICIENT
LANDSCAPE) OF THE LIVERMORE MUNICIPAL CODE**

(Municipal Code Amendment 09-005)

In September 2009, the California Department of Water Resources adopted a final updated model water efficient landscape ordinance.

The City initiated an application for Municipal Code Amendment 09-005 to amend its water efficient landscape ordinance to be consistent with the updated State model ordinance.

The Planning Commission held a public hearing on October 19, 2010, considered the staff recommendations, and heard and considered public testimony.

A Public Hearing Notice was duly published in a newspaper of local circulation.

The City Council held a public hearing on November 22, 2010, considered the Planning Commission and staff recommendations, and heard and considered public testimony.

NOW, THEREFORE, the City Council of the City of Livermore does ordain as follows:

Section 1. Environmental Review. The City Council has considered the staff report, along with comments received during the public review process. The Council hereby finds, on the basis of the whole record before it (including the staff report and comments received), that the project is exempt from the California Environmental Quality Act (CEQA) per the General Rule in CEQA Guidelines Section 15061(b)(3) of the CEQA Guidelines, because it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment. This is because the proposed ordinance will not decrease and, in some cases, will increase measures to promote water efficiency in landscaping as compared to the 1992 City Water Efficient Landscaping Ordinance, and it is at least as effective as the 2009 State Model Water Efficient Landscape Ordinance in promoting landscape water efficiency. The City Clerk is directed to file a Notice of Determination with the Alameda County Clerk.

Section 2. Findings and Declaration.

The City Council finds and declares that the state of California is historically an arid environment with limited amounts of water resources subject to ever increasing demands. There are enormous costs to the residents and ecosystem of the state to maintain current water resources systems and create new systems to meet current and

future demands for water. The State's, region's, and City's continued economic prosperity is dependent on continued water availability. Landscapes are essential to our quality of life, for example by providing areas for passive recreation and enhancing the environment by cleaning air and water and preventing erosion. Landscape design, installation, maintenance, and management can be water efficient. Therefore, the City Council finds that it is in the public interest of the residents of the city and the state to require the wise and efficient use of a limited and costly resource through regulations that require and promote water conservation.

Section 3. Planning Commission Recommendation. The City Council has considered and is satisfied with the recommendation and findings of the Planning Commission contained in Resolution 24-10 attached hereto as Exhibit A, and hereby finds it reflects the City Council's independent judgment and analysis, and the City Council hereby adopts the recommendations and findings by reference.

Section 4. Livermore Municipal Code.

Livermore Municipal Code (LMC) Chapter 13.25 (Water Efficient Landscape) is amended to read as set forth in Exhibit B, attached hereto.

Section 5. Severability. If any part of this ordinance is declared unconstitutional or invalid by a court, such unconstitutionality or invalidity shall not affect any of the remaining parts.

Section 5. Effective date. This ordinance shall take effect 30 days after its adoption.

Section 6. Publication. This ordinance or a comprehensive summary thereof shall be published once in a newspaper of general circulation of the City of Livermore within fifteen days after its adoption.

The forgoing ordinance was introduced and read at a meeting of the City Council held on November 22, 2010, by the following vote:

AYES: Councilmembers Marchand, Williams, Vice Mayor Horner, Mayor Kamena
NOES: None
ABSENT: Councilmember Leider
ABSTAIN: None

The ordinance was adopted at the regular meeting of the City Council held on December 13, 2010, by the following vote:

AYES: Councilmembers Horner, Williams, Vice Mayor Marchand, Mayor Kamena
NOES: None
ABSENT: Councilmember Leider
ABSTAIN: None

Chapter 13.25
Water Efficient Landscape

- 13.25.010 Authority.
- 13.25.020 Findings – Purpose.
- 13.25.030 Applicability.
- 13.25.040 Definitions.
- 13.25.050 Submittal Requirements.
- 13.25.060 Landscape Design Documentation Package Elements.
- 13.25.070 Landscape Installation Certification Package Elements.
- 13.25.080 Public Education.
- 13.25.090 Water Waste Prevention.
- 13.25.100 Violation.

13.25.010 Authority.

This chapter is enacted under the Water Conservation in Landscaping Act (Government Code Section 65591 et seq.) and is a "water efficient landscape ordinance" adopted by a local agency under that Act.

13.25.020 Findings – Purpose.

A. Findings. The city council finds and declares that the state of California is historically an arid environment with limited amounts of water resources subject to ever increasing demands. There are enormous costs to the residents and ecosystem of the state to maintain current water resources systems and create new systems to meet current and future demands for water. The State's, region's, and City's continued economic prosperity is dependent on continued water availability. Landscapes are essential to our quality of life, for example by providing areas for passive recreation and enhancing the environment by cleaning air and water and preventing erosion. Landscape design, installation, maintenance, and management can be water efficient. Therefore, the city council finds that it is in the public interest of the residents of the city and the state to require the wise and efficient use of a limited and costly resource through regulations that require and promote water conservation.

B. Purpose. The purpose of this chapter is to establish standards for designing, installing, and maintaining water efficient landscapes that avoid runoff and other water waste in landscape projects. This is accomplished through the requirements for responsible landscape design, soil care, irrigation design and scheduling, and management which utilize reasonable amounts of water while ensuring that aesthetic, functional, energy and environmental benefits of landscapes are achieved with design flexibility.

13.25.030 Applicability.

A. Projects meeting the applicability criteria of subsection B of this section, and for which an application is deemed complete on or after the effective date of this ordinance, shall comply with the submittal requirements of section 13.25.050.

B. Except as noted in subsections C, D and E of this section, the provisions of this chapter apply to landscape projects that require a permit, as that term is defined in section 13.25.040, and are:

1. New construction and rehabilitated landscapes for public agency projects and private non-residential development projects with a total project landscape area equal to or greater than 2,500 square feet;

2. New construction and rehabilitated landscapes which are developer-installed in single-family and multi-family projects with a total project landscape area equal to or greater than 2,500 square feet; or

3. New construction landscapes which are homeowner-provided and/or homeowner-hired in single-family and multi-family residential development projects with a total project landscape area equal to or greater than 5,000 square feet.

C. The exceptions to the requirements of subsection A of this section are that:

1. Only the water budget, irrigation evaluation, and landscape and irrigation maintenance schedule requirements shall apply to cemeteries (See sections 13.25.060(B); 13.25.070(B); and 13.25.070(D)); and

2. A separate landscape water meter is not required for a single family home.

D. Installed landscapes not meeting the criteria of subsection A of this section are subject only to the water waste prevention provisions of section 13.25.090.

E. The following categories of uses are exempt from this chapter:

1. Rehabilitated landscape projects that are homeowner-provided landscaping;

2. Agricultural and horticultural commerce (for example commercial activities such as farming of grains, wine grapes, vegetables, fruit and nut trees and other agricultural crop production; greenhouses; nurseries; and floriculture facilities);

3. Plant collections, as part of botanical gardens and arboretums open to the public;

4. Registered historical sites;

5. Ecological restoration projects and mined-land reclamation projects that do not require a permanent irrigation system; and

6. Community gardens open to the public.

F. Other related ordinances. Project applicants shall be required to consult other applicable ordinances, policies, and regulations with landscaping related requirements applicable in the City including but not limited to:

1. Tree Preservation ordinance (see Livermore Municipal Code chapters 12.20 (Article II);

2. The landscape sections of any checklists or scorecards which may be required by City ordinance including but not limited to the Civic Green Building ordinance; Civic Residential and Non-Residential Green Building ordinance; and Civic Bay-Friendly Landscaping ordinance (see Livermore Municipal Code chapters 15.32, 15.76, and 15.80, respectively);

3. The current Alameda Countywide Clean Water Program requirements and published associated technical guidance;

4. City of Livermore Design Standards and Guidelines

5. The current California Building Standards applicable in the City of Livermore; and

6. Any applicable specific plan.

13.25.040 Definitions.

1. "Amendment" means any material added to the soil to alter the pH or improve the natural physical properties of the soil, such as increased organic content, water retention, water infiltration, and drainage.

2. "Anti-drain or check valve" means a valve, located under a sprinkler head and installed

lower than the lowest head on the system, to hold water in the system when not in use so it minimizes drainage from the lower elevation sprinkler heads.

3. "Application rate" means the depth of water applied to a given area, usually measured in inches per hour.

4. "Applied water" means the portion of water supplied by the irrigation system to the landscape.

5. "Automatic controller" means a mechanical or solid state timer, capable of operating valve stations to set the days and length of time of a water application.

6. "Backflow prevention device" means a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system.

7. "Bay-Friendly" is a holistic approach to gardening and landscaping developed and espoused by StopWaste.Org that works in harmony with the natural conditions of the San Francisco Bay watershed. Bay-Friendly practices foster soil health, conserve water and other valuable resources while reducing waste and preventing pollution.

8. "Bay-Friendly Landscape Guidelines" means the most recent version of the guidelines developed by StopWaste.Org for use in the professional design, construction and maintenance of landscapes.

8. "Bubbler" means an irrigation head that delivers water to the root zone by flooding the planted area, usually measured in gallons per minute. Bubblers exhibit a trickle, umbrella, or short stream pattern.

9. "Certified landscape irrigation auditor" means a person certified to perform landscape irrigation audits by an accredited academic institution, a professional trade organization or other program.

10. "CIMIS" means the California Irrigation and Management Information System, which is a network of weather stations located around the state which collects reference evapotranspiration data and managed by the California Department of Water Resources.

11. "Compost" is an organic amendment that is the product of controlled biological decomposition of organic materials, often including urban plant debris and food waste. It is an organic matter resource that has the unique ability to improve the chemical, physical and biological characteristics of soils or growing media. It contains plant nutrients but is typically not characterized as a fertilizer.

12. "Conversion factor" means a number that converts the maximum landscape water allowance from inches per square feet to gallons per square foot per year.

13. "Cycle" means the complete operation of an irrigation controller station.

14. "Director" means the Community Development Department Director or his or her designee.

15. "Department" means the Community Development Department.

16. "Distribution Uniformity, lower quarter" means a measure of the uniformity of applied irrigation water over an area. It is a ratio of the average of the lowest twenty-five percent measurements to the overall average measurement, gathered through the use of distributed catch cans, commonly used to evaluate the uniformity of coverage of one or more irrigation sprinkler heads.

17. "Drip irrigation" means surface or subsurface irrigation systems which apply water through low volume emitters.

18. "Drought resistant soil" means soil that has been supplemented, for example by addition of an amendment such as compost and by covering with mulch, to maximize rainfall infiltration, increase the soil's capacity to hold water, and allow for plant roots to penetrate and proliferate such that the landscape can survive with less than the Maximum Applied Water Allowance.

19. "Drought tolerant, extra." "Extra drought tolerant" refers to a plant or landscape that can survive without irrigation throughout the year once established, although supplemental water may be desirable during drought periods for improved appearance and disease resistance. Plants in *Water-Conserving-Plants and Landscape for the Bay Area* (latest edition), published by East Bay Municipal Utility District, that can tolerate "no water after second year" are examples of such plants. Also known as "xeric" or "xeriscape" plants or landscapes.

20. "Ecological restoration project" means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.

21. "Emitter" means a drip irrigation emission device that delivers water slowly from the system to the soil.

22. "Established landscape" means the point in time at which plants in the landscape have developed roots into the soil adjacent to the root ball. Typically most plants are established after one or two years of growth.

23. "Establishment period" means the first year after installing the plant in the landscape or the first two years if irrigation will be terminated after establishment.

24. "Estimated applied water use" means the annual total amount of water estimated to be needed to keep the plants in the landscape healthy.

25. "ET adjustment factor" (ETAF) means a factor of 0.7 applied to reference evapotranspiration, that establishes the amount of water available to maintain the landscape and that will influence plant selection and take into account irrigation efficiency. See "reference evapotranspiration."

26. "Evapotranspiration" means the quantity of water evaporated from adjacent soil surfaces and transpired by plants during a specific time, expressed in inches per day, month or year. See, too, "reference evapotranspiration."

27. "Fertilizer" means a substance added to soil to provide it nutrients.

28. "Flow rate" means the rate at which water flows through pipes and valves (gallons per minute or cubic feet per second).

29. "Grading" means earthwork performed to alter the natural contours of an area.

30. "Grasses, cool-season." Cool-season grasses means grasses that green up and grow more during the spring, sets seed in early summer, then go dormant during warmer seasons until fall, when they begin growing again; e.g., Annual bluegrass, Kentucky bluegrass, Perennial ryegrass, Red fescue, and Tall fescue.

31. "Grasses, warm-season." Warm-season grasses mean grasses that green up and grow more during the summer, set seed in fall, and go dormant during cold seasons, e.g., Seashore paspalum, St. Augustine grass, Zoysiagrass, Bahiagrass, and Buffalo grass.

32. "Green roof" means a roof of a structure is partially or completely covered with vegetation and a growing medium, typically planted over a waterproofing membrane. It may also include additional layers such as a root barrier and drainage and irrigation systems.

33. "Grey water" means wastewater generated from on-site activities such as laundry, bathroom wash basins, and bathing, which can be recycled and treated so it becomes suitable for uses such as landscape irrigation and constructed wetlands, and which meets all applicable local, state, and federal regulations and is approved for such uses by the city. Greywater does not include toilet water, waste water from kitchen sinks, and laundry water from soiled diapers.

34. "Hardscape" means and includes paving, decks, patios, and other hard, nonporous surfaces.

35. "High flow sensors" or "flow meters" detect and report high flow conditions created by system damage or malfunction.

36. "High water using plant" means a plant that will require regular irrigation for adequate

appearance, growth and disease resistance. The primary initial reference which shall be consulted for determining the water use category of a plant is the plant list in the Water Use Classification of Landscape Species (see definition of "WUCOLS").

37. "Homeowner-provided landscaping" means any landscaping either installed by a private individual for an owner-occupied detached or attached single family residence or installed by a licensed contractor hired by a homeowner.

38. "Hydrozone" means a portion of the landscaped area having similar microclimate, and soil conditions, and plants with similar water needs that are served by a valve or set of valves with the same schedule. A hydrozone may be irrigated or nonirrigated. For example, a naturalized area planted with native vegetation that will not need supplemental irrigation once established in a nonirrigated hydrozone.

39. "Infiltration rate" means the rate of water entry into the soil expressed as a depth of water per unit of time (e.g., inches per hour). This value depends to a great extent on the texture of the soil and whether the soil is overly compacted.

40. "Invasive plant species" means species of plants not historically found in California that spread outside cultivated areas and can also damage environmental or economic resources. Their growth habits tend to be aggressive and they typically have high reproductive capacity and tendency to overrun the ecosystem they inhabit. Invasive species may be regulated by county agricultural agencies as noxious weeds. "Noxious weeds" means any weed designated by the Weed Control Regulations in the Noxious Weed Control Act and identified on a Regional District noxious weed control list. Lists of invasive plants include but are not limited to the California Invasive Plant Council inventory; the USDA invasive and noxious weeds database; and California Department of Food and Agriculture database.

41. "Irrigated" means supplied with equipment that can apply water from an irrigation system.

42. "Irrigation efficiency" means the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and from management practices. An example of how estimating can be done is by comparing water meter readings to estimated water need over a period of time such as a billing period.

43. "Irrigation system" means a complete connection of system components, including the water source, the water distribution network, controller and the necessary irrigation equipment.

44. "Landscape architect" means a person licensed to practice landscape architecture in the state of California Business and Professions Code, Section 5615 whose license is in good standing.

45. "Landscape area" means the total cumulative area of the portions of a project development site to be improved with planting and irrigation. It includes water bodies supplied with water such as fountains, swimming pools and ponds. It is the area subject to the Maximum Applied Water Allowance calculation. Natural open spaces and non-irrigated stormwater treatment areas (e.g., a detention pond, or non-irrigated bio-swales), building footprints, walkways, decks, patios, driveways, non-irrigated synthetic turf, nonirrigated portions of parking lots, and other non-irrigated hardscape areas are not included.

46. "Landscape contractor" means a person licensed by the state of California to construct, maintain, repair, install, or subcontract the development of landscape systems whose license is in good standing.

47. "Landscape irrigation audit" means an in-depth evaluation of the performance of an irrigation system conducted by a professional qualified to be a Certified Landscape Irrigation Auditor. An irrigation audit includes, but is not limited to, site inspections, verification of proper

equipment, proper installation and proper adjustment, evaluation of irrigations systems (e.g., system test with distribution uniformity, reporting and recommending mitigations for overspray or runoff that causes overland flow and development of efficient irrigation schedules).

48. "Landscape irrigation survey" means an evaluation of an irrigation system that is less detailed than an irrigation audit. An irrigation survey includes, but is not limited to: inspection, system test, and written recommendations to improve performance of the irrigation system.

49. "Landscape irrigation water use analysis" means an analysis of water use data based on meter readings and billing data.

50. "Landscape project" means the landscape area subject to the provisions of this chapter per section 13.25.030.

51. "Lateral line" means the water delivery pipeline that supplies water from the source to the emitters or sprinklers from the valve or outlet.

52. "Low water using plant" means a plant that can survive throughout the year with little irrigation and is semi-drought tolerant. The primary initial reference which shall be consulted for determining the water use category of a plant is the plant list in the Water Use Classification of Landscape Species (see definition of "WUCOLS").

53. "Low volume irrigation" means the application of irrigation water at low pressure through a system of tubing or lateral lines and low-volume emitters which may include but are not limited to drip, drip lines, micro-sprayers, and bubblers and which target small volumes of water at or near the root zone of plants.

54. "Main line" means the pressurized pipeline that delivers water from the water source to the valve or outlet.

55. "Matched precipitation rate" means that the emitter or sprinkler heads in a system or zone have similar precipitation rates.

56. "Maximum applied water allowance" or "water budget" means the calculated annual upper limit of annual applied water for the established landscaped area, based upon the area's reference evapotranspiration (ET), the ET adjustment factor, and the size of the landscaped area.

57. "Median" means a planted area which separates two roadways or divides a portion of a road into two or more lanes.

58. "Micro-spray" means spray irrigation through micro tubing to a series of nozzles attached to risers delivering water in small volumes and which such risers may be fixed or designed to pop-up.

59. "Microclimate" means the climate of a small, specific area that may contrast with the climate of the overall landscape area due to factors such as wind, sun exposure, plant density, slope, or proximity to reflective surfaces.

60. "Mined-land reclamation projects" means any surface mining operation with a reclamation plan approved in accordance with the Surface Projects: Mining and Reclamation Act of 1975.

61. "Moderate water using or semi-drought-tolerant plant" means a plant that can survive throughout the year with occasional irrigation. The primary initial reference which shall be consulted for determining the water use category of a plant is the plant list in the Water Use Classification of Landscape Species (see definition of "WUCOLS").

62. "Mulch" means materials such as leaves, arbor or wood chips, recycled wood waste, straw, compost, sawdust, or inorganic mineral materials such as rocks, gravel, and decomposed granite left loose and applied to the soil surface to retain moisture, retard weed growth, moderate soil temperature, or prevent erosion.

63. "New construction" means, for the purposes of this ordinance, a new building with a landscape or other new landscape, such as a park, playground, streetscape landscaping

such as median or planter strip, or greenbelt without an associated building.

64. "Operating pressure" means the pressure at which a system of sprinklers is designed to operate, usually indicated at the base of a sprinkler.

65. "Overspray" means water which is delivered beyond the landscaped area, wetting pavements, walks, structures, or other nonlandscaped areas.

66. "Permit" means an authorization issued by the City for new construction or rehabilitated landscapes and can include but not be limited to a building or landscape permit, plan check, land use entitlement, design review, encroachment permit, or capital improvement project approval.

67. "Permeable" has the same meaning as pervious.

68. "Pervious" means any surface or material that allows the substantial passage of water through the material and into the underlying soil such that runoff is substantially avoided.

69. "Plant factor" means a factor that when multiplied by reference evapotranspiration estimates the amount of water used by plants.

70. "Point of connection" means the point at which an irrigation system connects into the public water system and is usually the point at which the meter and back-flow prevention device is located or will be installed.

71. "Precipitation rate" means the rate of water arriving at the landscape surface via rainfall or an irrigation system discharge, expressed as a depth of water per unit of time (inches per hour).

72. "Project development site" means the area of land under common ownership and use which contains the landscape area subject to a permit, and which may contain other features including but not be limited to buildings, structures, and/or circulation routes.

73. "Rain sensor" or "Rain sensing shutoff device" means a device in wired or wireless communication with the automatic controller that shuts off the irrigation system when it rains.

74. "Record drawing" or "as built" drawings means a set of construction plans or computer file including the original design and noting all design deviations approved by the director. These drawings should also show the location of all major underground components, dimensioned from permanent features.

75. "Recreational area" means areas designed for passive or active physical activity or recreation such as parks, sports fields, school yards, golf courses, picnic grounds, or other similar areas where turf typically provides all or a portion of the landscape surface; turf areas in private residential non-street-frontage yards; decorative water features (e.g., fountains) open to public access; pools designed for human swimming; and hot tubs.

76. "Recycled water" means treated or recycled wastewater of a quality suitable for non-potable uses such as landscape irrigation and water features not intended for human consumption, and which is provided by the water purveyor or may be provided on site as grey water if approved for landscape irrigation use via an approved grey water irrigation system.

77. "Reference evapotranspiration" or "ET_o" means the evapotranspiration rate for a particular geographical area, such as the city. Reference evapotranspiration means a standard measurement of environmental parameters that acts as a reference point for establishing relative differences in the water use of plants. For purposes of this ordinance it is expressed in inches per year. Reference evapotranspiration is used as the basis of determining the maximum applied water allowance so that regional differences in climate can be accommodated.

78. "Registered Historical Site" means a site that is listed in a national, state or local register or inventory of historic resources or is zoned with a historic preservation (HP) combining district overlay.

79. "Rehabilitated landscape" means any existing planting area in which at least 50 percent of the landscape area is substantially redesigned, which may include but not be limited to new plant palette, substantially replaced irrigation system, and substantial grading modifications, but excludes replacement of plants like for like as part of ongoing or routine maintenance.

80. "Remote control valve" means a valve in an irrigation system which is activated by an automatic electric controller via a wired or wireless signal.

81. "Runoff" means water which is not absorbed by the surface to which it is applied. Runoff usually occurs when water is applied at too great a precipitation rate (e.g., application rate exceeds soil infiltration rate), when water is applied to saturated soils, or when water is applied to a steep slope.

82. "Smart irrigation controller" means an electronic automatic irrigation controller that is weater- or soil- moisture based with a timing device used to operate remote control valves that operate an irrigation system, which schedules irrigation events using evapotranspiration (weather-based) data such as that from the California Irrigation and Management Information System (see definition of CIMIS) and/or data from an integral or auxillary soil-moisture or rain sensor, and which may also include a high flow sensor for high flow damage or malfunction control.

83. "Soil moisture sensor" means an instrument for measuring the moisture content of the soil and capable of interruption of the irrigation cycle sensor when excessive moisture is detected.

84. "Soil texture" means the classification of soil based on the percentage of sand, silt, and clay in the soil. Soil texture largely determines the amount of water that can be stored in a soil as well as the soil infiltration rate.

85. "Special Landscape Area" (SLA) means areas of the landscape irrigated with recycled water; water features using recycled water; areas dedicated solely to edible plants; recreational areas as that term is defined in this section; and areas necessary for stormwater treatment such as bioswales which are irrigated.

86. "Sprinkler" means irrigation that projects pressurized water through the air (e.g., spray heads and rotors).

87. "Sprinkler, rotor head" means a sprinkler head that projects a rotating stream or streams of water.

88. "Sprinkler, spray head" means a sprinkler head that sprays water through a spray nozzle.

89. "Static water pressure" means the pipeline or municipal water supply pressure when water is not flowing.

90. "Station" means an area served by one valve or a set of valves that operate simultaneously.

91. "Temporarily irrigated area" means a hydrozone which will be irrigated for only the plant establishment period, not to exceed two years from the date of planting.

92. "Topsoil" means the top approximately 6 to 8 inches of undeveloped site soil.

93. "Turf" means a surface layer of earth containing mowed grass with its roots. See definitions of "grasses, warm-season" and "grasses, cool-season."

94. "Valve" means a device used to control the flow of water in the irrigation system.

95. "Very low water using plant" means a plant that can survive throughout the year with little or no irrigation and is generally extra drought tolerant. The primary initial reference which shall be consulted for determining the water use category of a plant is the plant list in the Water Use Classification of Landscape Species (see definition of "WUCOLS").

96 "Water conserving plant species" means a plant species identified as having a low plant factor.

97. "Water feature" means a design element where artificially applied open water performs an aesthetic or recreational function, including ponds, lakes, waterfalls, fountains, artificial streams, spas, and swimming pools. Constructed wetlands such as bioswales used for on-site wastewater treatment or stormwater best management practices that are not irrigated and used primarily for water treatment or stormwater retention or detention are not water features and, therefore, are not subject to the water budget calculation.

98. "Water purveyor" means the public or private owner or operator of the water supplying an approved water supply which provides the water that will be used to irrigate a landscape project.

99. "WUCOLS" means the most recent (2000 or later edition) Water Use Classification of Landscape Species published by the University of California Cooperative Extension, the Department of Water Resources and the Bureau of Reclamation.

13.25.050 Submittal requirements.

A. For projects subject to the provisions of this chapter, the property owner or property owner's authorized agent must submit a landscape design documentation package meeting the requirements of subsection B of this section prior to issuance of a permit and a landscape installation certification package meeting the requirements of subsection C of this section following landscape installation.

B. Landscape design documentation package: The property owner shall submit a landscape design documentation package consisting of items 1 through 6 below for review and approval with any permit application for the project. A complete landscape design documentation package must be submitted to the city in compliance with the requirements of this chapter and approved in order to be eligible for the issuance of a permit. The package must be prepared by an architect or landscape architect licensed by the state in good standing and it must include the following items which are detailed in section 13.25.060 of this chapter.

1. Landscape design documentation package checklist (See subsection 13.25.060(A) of this chapter);
2. Water budget and hydrozone calculations (see subsection 13.25.060(B) of this chapter);
3. Soil management plan (see subsection 13.25.060(C) of this chapter);
4. Landscape design plan (see subsection 13.25.060(D) of this chapter);
5. Irrigation design plan (see subsection 13.25.060(E) of this chapter); and
6. Grading plan (see section 13.25.060(F) of this chapter).

C. Landscape installation certification package: Following installation and prior to occupancy, the property owner shall submit a landscape installation certification package consisting of items 1 through 4 below for review and approval. A complete landscape installation certification package must be submitted to the city in compliance with the requirements of this chapter and approved in order to be eligible for a final inspection sign-off or certificate of occupancy. The package must be prepared by an architect, landscape architect, or landscape contractor licensed by the state in good standing and it must include the following items which are described in more detail in section 13.25.070 of this chapter.

1. Landscape installation certification and checklist (see subsection 13.25.070(A) of this chapter);
2. Irrigation evaluation (see subsection 13.25.070(B) of this chapter);

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3. Irrigation scheduling parameters (see subsection 13.25.070(C) of this chapter);
 4. Landscape and irrigation maintenance schedule (see subsection 13.25.070(D) of this chapter).

13.25.060 Landscape design documentation package elements.

A. Checklist and project information. Each landscape design documentation package shall include a checklist signed by a licensed architect or landscape architect on a form approved by the director and listing and verifying that all elements required by this section have been completed and submitted.

B. Water budget and hydrozone calculations. The landscape project's maximum applied water allowance, hydrozone summary, and estimated applied water use, as described below, shall be submitted with the landscape design documentation package.

1. Maximum Applied Water Allowance (MAWA, or water budget). A project's maximum applied water allowance shall be calculated using the following formula:

$$\text{MAWA} = (47.2)(0.62) \times [(0.7 \times \text{LA}) + (0.3 \times \text{SLA})]$$

MAWA = Maximum applied water allowance (gallons per year)

47.2 = Livermore reference evapotranspiration (Eto) in inches per square foot per year

0.62 = Conversion factor from inches to gallons per square foot

0.7 = Evapotranspiration (ET) Adjustment Factor (ETAF)

LA = Landscape area (square feet)

0.3 = Additional water allowance for special landscape area (SLA)

SLA = Landscape area that meets this chapter's definition of special landscape area (square feet)

a. An example calculation of the maximum applied water allowance for a hypothetical total project landscape area of 10,000 square feet, with no special landscape area, is below.

$$\begin{aligned} \text{MAWA} &= (47.2)(0.62) \times [(0.7 \times 10,000 \text{ sq ft}) + 0 \text{ sq ft}] \\ &= (29.264)(7,000) \text{ gallons per year} \\ &= 204,848 \text{ gallons per year} \end{aligned}$$

b. An example calculation of the maximum applied water allowance for a hypothetical total project landscape area of 10,000 square feet, including 2,000 square feet of special landscape area, is below.

$$\begin{aligned} \text{MAWA} &= (47.2)(0.62) \times [(0.7 \times 10,000 \text{ sq ft}) + (0.3 \times 2,000 \text{ sq ft})] \\ &= 29.264 \times [(0.7 \times 10,000 \text{ sq ft}) + (0.3 \times 2,000 \text{ sq ft})] \\ &= 29.264 \times (7,000 + 600) \text{ gallons per year} \\ &= 29.264 \times 7,600 \text{ gallons per year} \\ &= 222,406 \text{ gallons per year} \end{aligned}$$

c. An example calculation of the maximum applied water allowance for a hypothetical total project landscape area of 10,000 square feet, all of which is special landscape area, is below.

$$\begin{aligned} \text{MAWA} &= (47.2)(0.62) \times [(0.7 \times 10,000 \text{ sq ft}) + (0.3 \times 10,000 \text{ sq ft})] \\ &= 29.264 \times (7,000 + 3,000) \text{ gallons per year} \\ &= 29.264 \times 10,000 \text{ gallons per year} \\ &= 292,640 \text{ gallons per year} \end{aligned}$$

2. Estimated Applied Water Use. The total estimated applied water use shall not exceed the maximum applied water allowance. Precipitation may not be used as a source of water in calculating total estimated applied water use. The total estimated applied water use shall be the sum of the estimated applied water use calculated for each of the landscape design plan hydrozones using the following formula.

$$EAWU = EAWU (\text{non-SLA hydrozones}) + EAWU (\text{SLA})$$

$$EAWU = \text{Total project estimated applied water use in gallons per year}$$

$EAWU (\text{non-SLA hydrozones}) = [(47.2)(0.62)] \times [(PF \times HA)/IE]$ calculated separately for each hydrozone not meeting the definition of special landscape area (SLA), then added together for all such hydrozones.

$$EAWU (\text{SLA}) = [(47.2)(0.62)] \times (\text{SLA})$$

47.2 = Livermore reference evapotranspiration (Eto) in inches per square foot per year

0.62 = Conversion factor from inches to gallons per square foot

HA = Hydrozone area (in square feet)

PF = Hydrozone plant factor selected per subsection (B)(4) of this section

IE = Hydrozone irrigation efficiency elected per subsection (B)(5) of this section

SLA = Landscape area that meets this chapter's definition of special landscape area (square feet)

3. Hydrozone summary. A summary table form of the landscape and irrigation design plan's hydrozones (see subsections D and E of this section) shall be submitted and which shall include at a minimum for each hydrozone:

- a. Its area in square feet and a designation (e.g., a number or letter) matching each hydrozone to the corresponding landscape and irrigation design plan hydrozones.
- b. The highest water requirement category of its plant material and corresponding plant factor selected from the list of plant factors in subsection (B)(4) of this section; and
- c. Its proposed type of irrigation equipment and corresponding irrigation efficiency number selected from the list of irrigation efficiency numbers in subsection (B)(5) of this section.

4. Plant Factors. For the purpose of this chapter, the following plant factors shall be used for each type of plant material. These figures are based on average plant densities and general microclimate conditions of Livermore. For the purpose of this chapter, plants are divided into high (H), moderate (M), low (L) and very low (VL) water requirement categories. The initial reference which shall be consulted for determining the category of a plant is the plant list in the Water Use Classification of Landscape Species (WUCOLS), as defined in section 13.25.040 of this chapter, a copy of which is on file with the Department. Project applicants may request an alternate plant factor number for a specific plant species provided the request is substantiated by reference material from a published source or other data submitted to and approved by the director. As to plant selection, that list is not comprehensive, and the designer may use plants not on the list, provided that appropriate information is provided to substantiate the water requirements of those plants, such as reference material from a published source or other data acceptable to the director.

Plant Type	Plant Factor
Recirculating water features (use surface area)	1.0

Uncovered pools and spas	0.9
Cool season grasses	0.8
High water using trees, shrubs and groundcovers	0.8
Warm season grasses	0.7
Moderate water using trees, shrubs and groundcovers	0.5
Covered pools and spas	0.5
Low water using trees, shrubs and groundcovers	0.3
Temporarily irrigated areas	0.3
Very Low or extra drought tolerant water using trees, shrubs and groundcovers	0.09

5. Irrigation Efficiency. For the purpose of this chapter, the following irrigation efficiency numbers shall be used for each of the following irrigation equipment categories. Project applicants may request an alternate irrigation efficiency number for specific equipment provided the request is substantiated by reference material from a published source or other data such as manufacturer specifications submitted to and approved by the director.

Irrigation Equipment Type	Irrigation Efficiency
Drip irrigation (both above and below ground)	0.9
Bubblers and/or micro spray	0.85
Rotor head sprinklers in planter areas 8 feet or wider	0.75
Rotor head sprinklers in planter areas less than 8 feet wide	0.71
Spray head sprinklers in planter areas 8 feet or wider	0.71
Spray head sprinklers in planter areas less than 8 feet wide	not permitted
Water features	Applicant to propose based on how water applied

6. If requested by the local water purveyor, the city shall require the project applicant to submit a copy of the water budget calculations required by this section to the water purveyor.

C. Soil Management Plan.

1. The purpose of this section is to improve the soil's ability to absorb and retain water; have generally drought resistant soil; reduce runoff and erosion; and promote healthy plant growth.

2. If mass grading is proposed that will remove a foot or more of existing grade, submittal of the soils analysis report required by subsections (C)(3) and (C)(4) of this section may be deferred until after rough grading is completed at the discretion of the director, provided that the requirements of subsections (C)(3) and (C)(4) of this section are completed and made available with resulting recommendations to the project landscape professional and incorporated into the landscape design plan in the final approved construction plans. Soil analysis shall analyze sample(s) of topsoil preserved per grading requirements of subsection (F)(2)(b) of this section and other soils likely to be planted.

3. A soil analysis report using adequate sampling depth for the intended plants satisfying the following conditions shall be submitted as part of the submittal requirements.

- a. Determination of soil texture, indicating the percentage of organic matter;
- b. An approximate soil infiltration rate (either measured or derived from soil texture/infiltration rate tables). A range of infiltration rates shall be noted where appropriate;
- c. Measure of pH, and total soluble salts;
- d. Any recommended amendments to the soil to meet the purpose of this section.
- e. Fertilizers if used shall be specified as either organic and non-synthetic, or controlled release (slower release) if synthetic.
- f. Recommendations shall be tailored to recycled water if applicable.

4. Additional requirements for larger landscapes: In addition to the requirements of subsection (C)(3) of this section, the following soil analysis report requirements shall apply to project development sites with a total landscape area of 10,000 square feet or more, and are recommended for smaller landscape areas. The soil analysis shall also identify:

- a. Measurement of essential nutrients;
- b. Identification of critical soil limitations including but not limited to, compacted, water logged, or thin soils;
- c. Areas of quality topsoil to be preserved;
- d. Actions to mitigate identified critical soil limitations;
- e. Amendment of soils designed to promote healthy water and air access to the root zone of trees to be planted within 5 feet of any pavement or other compacted area; and
- f. The amount of compost to achieve a minimum 3.5% organic matter content by dry weight unless the soil report recommends an alternative percent of organic matter tailored to the plant materials specified in the landscape design plan.

5. Mulch.

- a. A mulch of at least three inches shall be applied to all planting areas except turf.
- b. Stabilizing mulch products shall be applied to slopes of 3 to 1 or greater (where 3 to 1 means 1 foot of vertical elevation change for every 3 feet of horizontal length).
- c. The mulching portion of the seed/mulch slurry in hydroseed applications shall meet the requirement of at least 3 inches of mulch.

D. Landscape Design Plan. A landscape design plan satisfying the following conditions

shall be submitted as part of the landscape design documentation package.

1. Plant Selection and Grouping. Any plants may be used in the landscape, with water conserving plant species encouraged, subject to the following conditions.

a. Water budget compliance. The estimated applied water use recommended does not exceed the maximum applied water allowance.

b. Use of hydrozones. Plants having similar water use shall generally be grouped together in distinct hydrozones (see subsection (B)(3) of this section). Other considerations for establishing hydrozones may include sun exposure, soil condition, and slope. Plants having nearly similar water use may be grouped together, that is, high and medium water using plants may be grouped, or medium and low water using plants may be grouped together. However, high and low water using plants shall not be grouped together in the same hydrozone. For mixed plant hydrozones, the more water intensive plant factor (higher number) shall be used for the entire hydrozone.

c. Amount of turf. Total irrigated areas specified as turf shall be limited to 50% for residential uses and 25% for non-residential uses, with turf bioswales necessary for stormwater treatment and recreational areas exempted.

d. Invasive plant species. Plants listed as invasive (A, B, and C rated) by the California Department of Food and Agriculture (CDFA), or listed as invasive (high or moderate rated) by the California Invasive Plant Council's (IPC) database of invasive species, shall not be used, except a turf plant rated C by CDFA or rated Moderate by Cal-IPC shall be permitted for use on sports fields and high traffic recreation areas. Project applicants may request to use other plant specie(s) rated C by CDFA or rated Moderate by Cal-IPC provided the request is substantiated by evidence submitted to and approved by the director that clearly establishes that due to plant or site characteristics the use of the requested plant will not have detrimental ecological effects on parks, greenbelts, water bodies, water ways, agriculture, and open spaces.

e. Fire prone areas. Landscapes in fire prone wildland areas shall be designed to comply with any applicable Fire Department regulations and to create a defensible space around a building as required by Public Resources Code Section 4291.

f. Homeowners Associations and Common Interest Developments. The covenants, codes and restrictions (i.e., CC&Rs) of a common interest development, which may include but not be limited to community apartment projects, condominiums, planned developments, stock cooperatives, or single family subdivisions governed by a Homeowners Association shall not prohibit or include conditions that have the effect of prohibiting the use of low-water use plants as a group. Further, said guidelines shall not prohibit the removal of turf, nor restrict or prohibit the reduction of turf in lieu of more water efficient alternatives.

2. Water Features.

a. Recycled water where it is an approved supply of water shall be used for all decorative water features.

b. Recirculating water shall be used for all decorative water features.

c. Pool and spa covers are highly recommended.

3. Soil erosion and runoff management.

a. The landscape and grading plans shall be coordinated to minimize irrigation and stormwater runoff and to maximize on-site retention and infiltration of irrigation water and stormwater. Examples of practices include but are not limited to directing runoff to landscape areas, bioswales, rain gardens and/or similar features.

b. Turf shall not be specified on slopes of 4 to 1 or greater if the toe of the slope is next to an impermeable surface (where 4 to 1 means 1 foot of vertical elevation change for every 4 feet of horizontal length).

4. Landscape Design Plan Submittal Requirements. The landscape design plan shall demonstrate how it meets the requirements of sub-sections (D)(1) (plant selection and grouping), (D)(2) (water features) if applicable, and (D)(3) (soil erosion and runoff management) of this section, and shall be drawn on project base sheets at a scale that accurately and clearly identifies and includes the following:

a. Designation of hydrozones. Depict each hydrozone and its plant factor. Provide the square footage of each hydrozone and the total landscaped area that matches the square footage amounts in the hydrozone summary table required by subsection (B)(3) of this section;

b. Designation and square footage of landscape areas or features meeting this chapter's definition of special landscape area if any;

c. Landscape materials, trees, shrubs, ground cover, turf, and existing vegetation. Planting symbols shall be clearly drawn and plants labeled by botanical name, common name, container size, spacing and quantities of each group of plants indicated. Include the water requirement category of each plant material (very low (VL), low (L), moderate (M) or high (H)) as described in subsection (B)(4) (Plant Factors) of this section;

d. Natural features, including, but not limited to, rock outcroppings and existing trees. Include trunk circumference measured four and one-half feet above grade for existing trees (see Tree Preservation in LMC Chapter 12.20 Article II);

e. Soil management information (see subsection (C) (soil management plan) of this section;

f. Context information including but not limited to property lines, adjacent street name(s), existing and proposed buildings, structures, and retaining walls;

f. Impermeable surface information including but not limited to streets, driveways, walkways, and other paved areas adjacent to or integrated with the landscape project;

g. Pools, spas, ponds, and water features and the surface area in square feet of all such features;

h. Location of slopes greater than 25% (where 25% means one foot of vertical elevation change for every four feet of horizontal length);

i. Location and description of any proposed rain harvesting or catchment facilities, bioswales, green waste recycling areas, and/or green roofs; and

j. The statement, "I have complied with the criteria of Livermore Municipal Code Chapter 13.25 and have applied them for efficient use of water in the landscape design plan," and the signature of a licensed architect or landscape architect.

E. Irrigation Design Plan. An irrigation design plan meeting the following conditions shall be submitted as part of the landscape design documentation package.

1. Purposes. The purpose of an irrigation design plan shall be to apply water in a way that does not exceed the maximum applied water allowance, and that meets plant water needs while avoiding water waste such as overspray, runoff, and low head drainage. Irrigation systems shall be designed to achieve a minimum 0.71 irrigation efficiency.

2. For design review the irrigation design plan may be conceptual, consisting of a written description and diagram depicting hydrozones and what types of irrigation equipment (drip, spray sprinklers, stream sprinklers, etc.) shall be used in each hydrozone, provided that compliance with all requirements is fully documented within approved construction plans

3. Irrigation Design Criteria.

a. Hydrozones. The irrigation design plan shall be zoned to implement the hydrozones identified in the summary table and the landscape design plan (subsections (B)(3) and (D)(1) of this section);

b. Point of Connection. All irrigation equipment must be connected to the landscape water meter for a project. No portion of the irrigation system may be connected to the domestic water meter, unless only one water meter is required for the property.

c. Runoff and Overspray. The irrigation system shall deliver water at a rate compatible with the soil types and infiltration rates of the site. All irrigation systems shall be designed to avoid runoff, low head drainage, overspray, or other similar conditions where water flows onto adjacent property, nonirrigated areas, walks, roadways or structures. Proper irrigation equipment and schedules, including such features such as repeat cycles, shall be used to closely match maximum application rates to infiltration rates.

d. Pressure regulation. The irrigation system shall be designed to keep dynamic pressure at each emission device within the manufacturer's recommended pressure range. Static water pressure shall be measured at the point of connection if available at the design stage, or otherwise shall be estimated. If static pressure is outside the irrigation system's required dynamic pressure range, then pressure-regulating devices such as inline pressure regulators, booster pumps, or other devices shall be specified.

e. Recycled water. If a separate landscape water meter is required and where recycled water is an approved supply of water, recycled water shall be used for landscape irrigation.

4. Equipment.

a. Water Meters. Separate landscape water meters shall be installed for all new construction or rehabilitation landscape projects subject to this chapter (except single-family homes). All irrigation equipment throughout all projects must be connected to the landscape water meter.

b. Controllers. Smart irrigation controllers shall be required for all irrigation systems and must be able to accommodate all aspects of the design. Individual controllers irrigating an area of 10,000 or more square feet shall be installed with a rain sensor(s) which shall be properly installed (e.g., in a location suitable for detecting rain without interference from structures and irrigation spray).

c. Valves. Electronic valves are required for all irrigation systems. A valve may irrigate a maximum of one hydrozone of plants with similar water use. Where feasible, trees shall be placed on separate valves from shrubs, groundcovers, and turf.

d. Sprinkler Heads shall have compatible application rates within each control valve circuit. Sprinkler heads shall be selected for proper and uniform area coverage, application rate, operating pressure, adjustment capability, and ease of maintenance. Riser protection devices (e.g., swing joints) shall be specified for damage prone or high traffic areas.

e. Sprinkler heads must match precipitation rates unless otherwise recommended by the manufacturer.

f. Sprinkler irrigation for any contiguous turf area that is 10,000 or more square feet in size must be designed to achieve a minimum 0.7 lower quarter distribution uniformity, to be verified by the landscape installation certification.

g. Anti-drain (Check) Valves. Anti-drain valves shall be installed at strategic low points throughout the plan to avoid low-head drainage.

h. Low volume equipment areas. Low volume irrigation shall be used in all the

following areas, unless an alternative design having the effect of low volume irrigation (e.g., micro-sprayers) and which will avoid runoff and erosion is approved by the director as part of the landscape design documentation package and verified by the landscape installation certification.

1. Landscape areas less than 8 feet in width in any direction;
2. Mulched areas;
3. Within 24 inches of a non-permeable surface unless no runoff occurs or the adjacent non permeable surface drains entirely to permeable surfaces capable of admitting and retaining the irrigation runoff;
4. On slopes greater than 25% (where 25% means one foot of vertical elevation change for every four feet of horizontal length); and
 - i. Irrigation of slopes greater than 25% shall not exceed an application rate of 0.75 inches per hour, unless an alternative design avoiding overspray and runoff is approved by the director (e.g., the toe of the slope drains entirely to permeable surfaces).
 - j. Grey water use for landscape irrigation shall comply with California Building Standards.

5. Irrigation Design Plan Submittal Requirements. The irrigation design plan shall bear the signature of an architect, landscape architect, or landscape contractor licensed by the state in good standing. The irrigation design plan shall demonstrate how it meets the requirements of sub-sections (E)(3) (irrigation design criteria) and (E)(4) (equipment) of this section, and shall be drawn on project base sheets at a scale that accurately and clearly identifies and includes the following:

- a. Location and size of separate water meters for landscape irrigation;
- b. Location, type, and size of all components of the irrigation system, including automatic controllers, main and lateral lines, valves, sprinkler heads, emitters, moisture sensing devices, rain sensing devices, quick couplers, and backflow prevention devices;
- c. Static water pressure at the point of connection to the public water supply;
- d. Flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (psi) for each station;
- e. Each area to be irrigated by each valve;
- f. Location of soil moisture or rain sensor(s) if any; and
- g. The statement, "I have complied with the criteria of Livermore Municipal Code Chapter 13.25 and have applied them for efficient use of water in the landscape design plan," and the signature of an architect, landscape architect, or landscape contractor licensed by the state in good standing.

F. Grading Design Plan. Grading design plans satisfying the following conditions shall be submitted as part of the landscape design documentation package.

1. Grading design purposes. Grading of a project landscape area shall be designed to minimize soil erosion; avoid compaction of and protect topsoil where space allows stockpiling topsoil; maximize on-site retention and infiltration of water; confine runoff to the property; direct runoff to permeable surfaces; and avoid soil compaction in landscape areas. If applicable, the grading design plan shall also comply with any best management practice guidelines, stormwater ordinances, stormwater management plans and any other related requirements that have been adopted by any federal, State of California, regional and/or city agency for any activity, operation or facility which may cause or contribute to stormwater pollution.

2. Grading Design Submittal Requirements. The grading design plan shall meet the purposes of 13.25.060(F)(1), may be separate from but use the same format as the landscape design plan, and shall be drawn on project base sheets at a scale that accurately and clearly identifies and includes the following:

a. The grading plan shall indicate finished configurations and elevations of the landscaped area, including the height of graded slopes, drainage patterns, pad elevations, and finish grade. It should also include existing spot elevations at the base of each existing shrub or tree that will remain, including proposed elevation changes within their drip lines.

b. The grading plan shall include specifications to avoid topsoil compaction. Additionally, if storage space exists, the grading plan shall indicate areas to stockpile topsoil for reincorporation into planting areas and specify to the grading contractor to remove and store topsoil prior to rough grading, and protect it from wind and rain erosion.

13.25.070 Landscape Installation Certification Package Elements.

A. Signed certification. The city shall not grant a final inspection sign-off or certificate of occupancy for any project until the property owner submits a landscape installation certification package to the Department consistent with this section for review and approval by the director. A licensed architect, landscape architect, or landscape contractor shall prepare the package. The landscape installation certification package shall consist of a signed certification on a form approved by the director and attachments 1-5 below and attachment 6 below, if applicable. The certification shall specifically indicate that the landscape project was installed per the landscape design documentation package and that the irrigation evaluation has been performed, along with a list of any observed deficiencies, and documentation that those deficiencies have been corrected. A sample of such a form is available in the Department.

1. An irrigation evaluation per the requirements of subsection B of this section;
2. A summary of controller setting parameters per the requirements of subsection C of this section;
3. A maintenance schedule per the requirements of subsection D of this section;
4. Verification of implementation of soil management recommendations meeting the requirements of subsection 13.25.060(C) of this chapter; and
5. The statement, "The landscape project has been installed substantially in accordance with the approved landscape documentation package," and signature of the person preparing the certification.
6. Record drawings of the irrigation system if irrigation system installation deviated, with approval of the director, from the design submitted and approved with the landscape design documentation package.

B. Irrigation Evaluation. A landscape irrigation evaluation meeting the following conditions shall be submitted with the landscape certification package.

1. Audit or survey requirement. For newly installed irrigation systems, a landscape irrigation survey, as that term is defined in 13.25.040, shall be conducted. For projects relying on a pre-existing irrigation system, a landscape irrigation audit, as that term is defined in section 13.25.040 of this chapter, shall be conducted. The landscape design plan, irrigation design plan, and irrigation schedule shall be made available to the person conducting the irrigation evaluation.

2. For projects developed into multiple saleable lots, the irrigation evaluation may be limited

to a common area (e.g., project green space or park) and a representative sample of the lots.

3. Minimum criteria. The irrigation evaluation required by subsection (B)(1) of this section shall include but not be limited to, inspection, system test, reporting overspray or run off that causes overland flow, and documenting controller parameters, and shall at minimum verify the following.

a. That if the controller relies on soil moisture or rain sensors, that these sensors are properly installed (e.g., that a rain sensor is in a location suitable for detecting rain without interference from structures and irrigation spray) per subsection 13.25.060(E)(4)(b) of this chapter.

b. That if the landscape contains a contiguous turf area that is 10,000 square feet or more in size, that it is irrigated to achieve at least a minimum of 0.7 lower quarter distribution uniformity in accordance with subsection 13.25.060(E)(3)(f) of this chapter as verified by a distribution uniformity test of at least one representative contiguous turf area of 10,000 square feet or more in size.

c. That all areas specified in subsection 13.25.060 (E)(4)(h) of this chapter for low volume irrigation are irrigated with low volume irrigation or an approved equivalent that avoids runoff and erosion (e.g., such that overspray or runoff to adjacent permeable surfaces is negligible or completely drains to permeable surfaces).

d. That if the project contains slopes steeper than 4 to 1 (meaning 1 foot of vertical elevation change for every 4 feet of horizontal length), that per subsection 13.25.060 (E)(4)(i) of this chapter they are not irrigated with a precipitation rate exceeding 0.75 inches per hour, unless irrigation exceeding this rate is done in a way that avoids runoff, overspray and erosion (e.g., the toe of the slope drains entirely to permeable surfaces).

4. Corrective measures. The irrigation evaluation required by subsection (B)(1) of this section shall include corrective measures if necessary to meet the criteria of subsection (B)(2) of this section, and shall document that the corrective measures have been completed.

C. Irrigation Scheduling. For the efficient use of water, all irrigation schedules shall be developed and evaluated to utilize the minimum amount of water required to promote and maintain plant health. For projects developed into multiple saleable lots, submittal of irrigation schedule parameters may be limited to any park, any representative common area, and a representative sample of the lots. Irrigation schedules shall meet the following conditions.

1. Controllers. Irrigation scheduling shall be regulated by automatic irrigation controllers. Total annual applied water shall not exceed the maximum applied water allowance (MAWA). For implementation of the irrigation schedule, particular attention must be paid to irrigation run times, emission device, flow rate, and current reference evapotranspiration, so that applied water meets the total estimated applied water use including any water needed for any water features.

2. Schedule parameters. Parameters used to set the automatic controller shall be developed and submitted for:

a. At a minimum the plant establishment period; established landscape if any; and temporarily irrigated areas if any; and

b. All of the following that apply for each station:

1. Type of irrigation equipment;

2. Irrigation interval (days between irrigation);

-
3. Run time (hours or minutes per cycle to avoid runoff);
 4. Suggested number of cycles per day to avoid runoff;
 5. The amount of applied water (in 100 cubic feet and gallons) recommended on a monthly and annual basis;
 6. Application rate setting;
 7. Root depth setting
 8. Plant type setting;
 9. Soil type, infiltration rate, water holding capacity, and mulch depth;
 10. Slope factor setting;
 11. Shade factor setting; and
 12. Irrigation uniformity or efficiency setting.

3. Time of operation. Overhead sprinkler irrigation shall normally be scheduled during non-daylight hours to reduce irrigating during times of high wind or high temperature.

D. Landscape and Irrigation Maintenance Schedules. A regular maintenance schedule satisfying the following conditions shall be submitted as part of the landscape installation certification package:

1. Landscaping and the irrigation system shall be maintained to ensure water efficiency. A regular maintenance schedule shall include, but not be limited to, checking, adjusting, clearing obstructions in, and repairing irrigation equipment; resetting the automatic controller; aerating and dethatching turf areas; replenishing mulch; fertilizing; and pruning and weeding in all landscaped areas.

2. Repair of irrigation equipment shall be done with the originally specified materials or their equivalents.

3. Indicate with details if green waste recycling is part of the maintenance program. Sustainable and environmentally-friendly maintenance practices, such as, integrated pest management, are also encouraged.

E. If requested by the local water purveyor, the city shall require the project applicant to submit, a copy of all or a portion of the landscape installation certification package required by this section to the water purveyor

13.25.080 Public education.

A. Publication.

1. The city shall provide information upon request:
 - a. To owners of all new, single-family residential homes explaining their maximum applied water allowance (water budget) and regarding the design, installation and maintenance of water efficient landscapes; and
 - b. To water users about the efficient use of landscape water in the city; and
 - c. About integrated pest management.

B. Model Homes. All model home complexes that include landscaping shall demonstrate the principles of water efficient landscapes as described in this chapter.

1. Information.

- a. The project developer shall make available to all visitors of the model home complex a brochure and/or diagram depicting the landscape plan for each model,
-

identifying all plant material by both common and botanical name, identifying whether each plant is a low, medium or high water using plant, depicting and describing hydrozones within the plan, describing the irrigation equipment used, and describing any other features which contribute to the overall water efficiency of the landscape plan.

b. The project developer shall provide each buyer of a home in the project:

1. A copy of the information described in subsection B(1)(a) of this section;
2. A copy of the operations manual for the irrigation controller; and
3. A copy of the latest edition of "Bay-Friendly Gardening Guide" or an equivalent information source or sources describing environmentally sustainable landscape design, irrigation, soil management, and maintenance practices.

2. For each model home in each project, the developer shall place signs to:

- a. Identify it as a water efficient landscape;
- b. Identify all plant materials within the plan by both common and botanical name, including their relative water use;
- c. Identify hydrozones, irrigation equipment, and any other features which contribute to the overall water efficiency of the plan.

13.25.090 Water waste prevention

A. Maintenance. Landscapes and their irrigation systems shall be maintained and managed to promote plant health with the least necessary amount of water; prevent water wastage from irrigation system breakages; and minimize runoff diversion from target landscape areas or other permeable surfaces due to low head drainage, overspray, inefficient irrigation scheduling, or other similar conditions. Environmentally-friendly maintenance practices such as those found in the "Bay-Friendly Landscape Guidelines" are encouraged (for example, integrated pest management, especially in areas that drain to bioswales, rain gardens and similar water treatment features).

B. Landscapes one acre or larger. Property owners of landscapes which do not otherwise meet the applicability criteria (e.g., type and size of project) of subsection 13.25.030(B) of this chapter and which are one acre or more in area shall:

1. Cooperate with their water purveyors who may provide water waste prevention recommendations resulting from a landscape irrigation water use analysis, landscape irrigation audit, and/or landscape irrigation survey;

2. Be subject to maintaining irrigation levels not exceeding a water budget calculated per subsection 13.25.060(B)(1) of this chapter if the site has a water meter. (Note: the aforementioned water budget requirement takes into account that prior water efficient landscape regulations (Ordinance 1399 adopted December 21, 1992) used an evapotranspiration (ET) adjustment factor of 0.7, as does this chapter.)

3. Attaining to the greatest extent practicable, taking into account the limitations of the existing irrigation system and if necessary by retrofitting sprinkler heads, a minimum of 0.7 lower quarter distribution uniformity for contiguous turf areas that are 10,000 or more square feet in area.

C. Homeowners Associations and Common Interest Developments. The covenants, codes

and restrictions (i.e., CC&Rs) of a common interest development, which may include but not be limited to community apartment projects, condominiums, planned developments, stock cooperatives, or single family subdivisions governed by a Homeowners Association, shall not prohibit or include conditions that have the effect of prohibiting the use of low-water use plants as a group. Further, said guidelines shall not prohibit the removal of turf, nor restrict or prohibit the reduction of turf in lieu of more water efficient alternatives. For registered historical sites only, the requirements of this subsection may be waived if it is determined by the director or Historic Preservation Commission, via referral for determination from the director, that this requirement will significantly diminish the ability of the registered historical site to convey its historic significance.

13.25.100 Violation

A. Violations of any provision of this Ordinance may result in the immediate suspension of any development permit previously issued for the property upon which said violation occurred, until compliance with all the requirements of this Ordinance is demonstrated to the satisfaction of the director.

